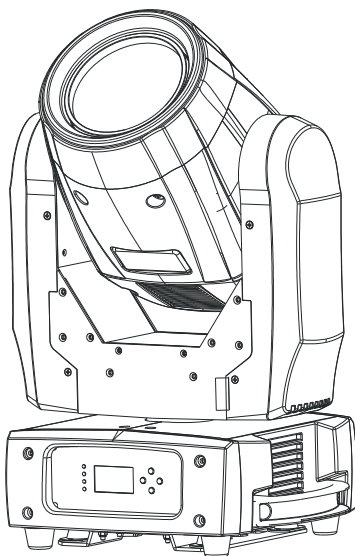


# MH 4 Beam



## User Manual



Professional Entertainment Technology

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**Manual: Revision B**

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# Safety information



## WARNING!

**Read the safety precautions in this manual before installing, powering, operating or servicing this product.**

The following symbols are used to identify important safety information on the product and in this manual:



### **Warning!**

***Safety hazard.  
Risk of severe  
injury or death.***



### **Warning!**

***LED light  
emission. Risk  
of eye injury.***



### **Warning!**

***Refer to  
manual before  
installing,  
powering or  
servicing.***



### **Warning!**

***Hazardous  
voltage. Risk  
of lethal or  
severe electric  
shock.***



### **Warning!**

***Hot surfaces  
and fire  
hazard.***



Warning! Risk Group 3 (high risk) product according to EN 62471. Do not view the light output with optical instruments or any device that may concentrate the beam.

This product is for professional use only. It is not for household use. It presents risks of severe injury or death due to fire hazards, electric shock and falls. It produces a powerful, concentrated beam of light that can create a fire hazard or a risk of eye injury if the safety precautions below are not followed.

Respect all locally applicable laws, codes and regulations when installing, powering, operating or servicing the fixture.



Read this manual before installing, powering or servicing the fixture, follow the safety precautions listed below and observe all warnings in this manual and printed on the fixture. Keep this manual for future use. If you have questions about how to operate the fixture safely, please contact your RUSH by Martin™ dealer or call the Martin™ 24-hour service hotline on +45 8740 0000, or in the USA on 1-888-tech-180.

For the latest user documentation and other information about this and all Martin™ products, please visit the Martin website at <http://www.martin.com>



### ***Protection from electric shock***

Shut down power to the fixture before carrying out any installation or maintenance work.

Disconnect the fixture from AC power before removing or installing any cover or part and when not in use.

Ensure that the fixture is electrically connected to ground (earth).

Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault (earth-fault) protection.

Replace defective fuses with ones of the specified type and rating only.

The voltage and frequency at the power throughput outlet are the same as the voltage and frequency applied to the power inlet. Only connect devices to the throughput outlet that accept this voltage and frequency.

When connecting fixtures to power in a linked chain, Mains OUT to Mains IN, do not link more than five (5) RUSH MH 4 fixtures in total at 100-120 V and do not link more than ten (10) RUSH MH 4 fixtures in total at 200-240 V.

Before using the fixture, check that all power distribution equipment and cables are in perfect condition and rated for the current requirements of all connected devices.

Isolate the fixture from power immediately if the power plug or any seal, cover, cable, or other component is damaged, defective, deformed, wet or showing signs of overheating. Do not reapply power until repairs have been completed

Do not expose the fixture to rain or moisture.



### ***Protection from burns and fire***

Do not use the fixture to illuminate surfaces within 8 m (26.2 ft.) of the fixture.

Keep flammable materials well away from the fixture. Keep all combustible materials (e.g. fabric, wood, paper) at least 100 mm (4 in.) away from the fixture head.

Do not operate the fixture if the ambient temperature ( $T_a$ ) exceeds 40° C (104° F).

The surface of the product casing can reach up to 85° C (185° F) during operation. Avoid contact by persons and

materials. Allow the fixture to cool for at least 10 minutes before handling.

Ensure that there is free and unobstructed airflow around the fixture. Provide a minimum clearance of 100 mm (4 in.) around fans and air vents.

Do not attempt to bypass thermostatic switches or fuses.

Do not stick filters, masks or other materials onto any optical component.



### ***Lamp safety***

Install only a lamp that is approved for use in the product.

Prolonged exposure to an unshielded discharge lamp can cause eye and skin burns. Do not stare directly into the light output.

Never look at an exposed lamp while it is lit.

Do not operate the fixture with missing or damaged covers, shields, lenses, ultraviolet screens or any optical component.

A hot discharge lamp is under pressure and can explode without warning. Allow the fixture to cool for at least 2 hours and protect yourself with safety glasses and gloves before handling a lamp.

Replace the lamp immediately if it becomes visually deformed, damaged or in any way defective.

Monitor hours of lamp use and lamp intensity and replace the lamp when it reaches the limit of its service life as specified in this manual or by the lamp manufacturer.

If the quartz envelope of a discharge lamp is broken, the lamp releases a small quantity of mercury and other toxic gases. If a discharge lamp explodes in a confined area, evacuate the area and ventilate it thoroughly. Wear nitrile gloves when handling a broken discharge lamp. Treat broken or used discharge lamps as hazardous waste and send to a specialist for disposal.

### ***Protection from injury***



Do not look directly into the light beam. Do not point the beam in a direction where a person can look directly into it. Ensure that persons are not looking at the light beam when the product lights up suddenly. This can happen when power is applied, when the product receives a DMX signal, or when certain control menu items are selected.

Do not look at the beam with magnifiers, telescopes, binoculars or similar optical instruments that may concentrate the light

output.

To minimize the risk of eye irritation or injury, disconnect the fixture from power at all times when the fixture is not in use, and provide well-lit conditions to reduce the pupil diameter of anyone working on or near the fixture.

Fasten the fixture securely to a fixed surface or structure when in use. The fixture is not portable when installed.

Ensure that any supporting structure and/or hardware used can hold at least 10 times the weight of all the devices they support.

If suspending from a rigging structure, fasten the fixture to a rigging clamp. Do not use safety cables as the primary means of support.

If the fixture is installed in a location where it may cause injury or damage if it falls, install a secondary attachment such as a safety cable that is approved by an official body such as TÜV as a safety attachment for the weight that it secures. The safety cable must comply with EN 60598-2-17 Section 17.6.6 and be capable of bearing a static suspended load that is ten times the weight of the fixture and all installed accessories.

Allow enough clearance around the head to ensure that it cannot collide with an object or another fixture when it moves.

Check that all external covers and rigging hardware are securely fastened.

Block access below the work area and work from a stable platform whenever installing, servicing or moving the fixture.

Do not lift or carry the fixture by its head. Always ensure that the fixture is supported by its base.

In the event of an operating problem, stop using the fixture immediately and disconnect it from power. Never attempt to use a fixture that is obviously damaged.

Do not modify the fixture or install other than genuine RUSH by Martin™ parts.

Refer any service operation not described in this manual to a qualified technician.

# Introduction

The RUSH MH 4 Beam™ is a compact-beam moving head, equipped with an MSD Platinum 2R lamp in a state-of-the-art optical system. The device is extremely rugged, lightweight and compact, ideal for smaller venues.

The fixture produces an intense and narrow beam for spectacular mid-air looks and effects. It houses a fixed gobo wheel and color wheel with a multitude of effects possible from a dimmer and strobe, 6-facet prism and focus.

The fixture can be controlled using any DMX-compliant controller.

The fixture is supplied with this user manual, a 1.5 m (5 ft) power cable (local power plug not included) and two mounting brackets.

Before using the product for the first time:

1. Read 'Safety information' on page 4 before installing, powering, operating or servicing the fixture.
2. Unpack and ensure that there is no transportation damage before using the fixture. Never attempt to operate a damaged fixture.
3. If the fixture is not going to be hard-wired to an AC mains power source, install a local power plug (not supplied) on the end of the supplied power cable.
4. Before operating, ensure that the voltage and frequency of the local power source match the mains power requirements of the fixture.
5. Check the Martin Professional website at [www.martin.com](http://www.martin.com) for the most recent user documentation and technical information for the fixture. RUSH by Martin user manual revisions are identified by the revision letter at the bottom of the inside cover.

Note that whenever AC mains power is applied to the fixture, it will reset all effects and functions to their home positions. The fixture head will move. This process usually takes around 20 seconds.



# Physical installation



Warning! Read 'Safety information' on page 4 before installing the fixture.

The fixture is designed for indoor use only and must be used in a dry location with adequate ventilation. Ensure that none of the fixture's ventilation slots are blocked and ensure that the product is firmly affixed to avoid vibration during operation.

## Fastening the fixture to a flat surface

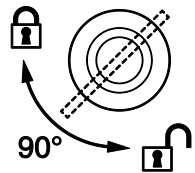
The fixture can be fastened to a hard fixed flat surface that is oriented at any angle. Ensure that the surface and all fasteners used can support at least 10 times the weight of all fixtures and equipment they will support.

Fasten the fixture securely. Do not stand it on a surface or leave it where it can be moved or fall over. Attach a securely anchored safety cable to the fixture if it is installed in any location where it may fall and cause injury or damage if the primary attachment fails.

## Mounting the fixture on a truss

The fixture can be clamped to a truss or similar rigging structure in any orientation. When clamping a fixture to a truss:

1. Check that the rigging structure can support at least 10 times the weight of all fixtures and equipment to be installed on it.
2. Block access under the work area.
3. Provision for attaching omega brackets with quarter-turn fasteners is provided on the base of the fixture. Prepare two omega brackets by bolting suitable rigging clamps to them, then fasten the omega brackets to the base of the fixture. See illustration on right. Turn quarter-turn fasteners a full 90° to lock them.
4. Working from a stable platform, hang the fixture on the truss and fasten the rigging clamps.
5. Secure the fixture against clamp failure by looping a secondary attachment such as an approved safety cable that is rated for the weight of the fixture through one of the openings provided in the base of the fixture and around a secure anchoring point.
6. Check that the head will not collide with other fixtures or objects.



# AC power



Warning! Read ‘Safety information’ on page 4 before connecting the fixture to AC mains power.

For protection from electric shock, the fixture must be grounded (earthed). The power distribution circuit must be equipped with a fuse or circuit breaker and ground-fault (earth-fault) protection.



Socket outlets or external power switches used to supply the fixture with power must be located near the fixture and easily accessible so that the fixtures can easily be disconnected from power.

Use only Neutrik PowerCon cable connectors to connect to the fixture’s power sockets.

The fixture has an auto-ranging power supply that accepts AC mains power at 100-120 V or 200-240 V at 50 or 60 Hz. Do not supply the fixture with AC mains power that is not within these ranges.

Do not insert or remove live Neutrik PowerCon connectors to apply or cut power, as this may cause arcing at the terminals that will damage the connectors.

Do not use an external dimming system to supply power to the fixture, as this may cause damage to the fixture that is not covered by the product warranty.

Power input and throughput cables must be rated 16 A minimum, have three conductors 1.5 mm² (16 AWG) minimum conductor size and an outer cable diameter of 5 - 15 mm (0.2 - 0.6 in.). Cables must be hard usage type (SJT or equivalent) and heat-resistant to 90° C (194° F) minimum. In the EU the cable must be HAR approved or equivalent. Cables used for power throughput must meet the same specifications as for power input cables.

The fixture can be hard-wired to a building electrical installation if you want to install it permanently, or a power plug (not supplied) that is suitable for the local power outlets can be installed on the power cable.

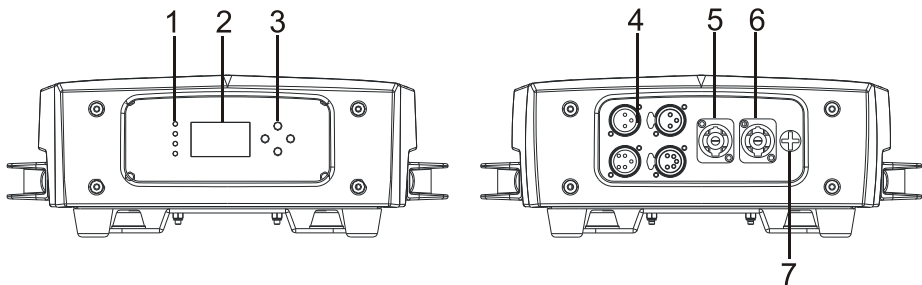
If you install a power plug on the power cable, follow the plug manufacturer’s instructions and connect the wires in the power cable as shown in this table:

|           | Earth, Ground or ⊕ | Neutral or N | Live or L |
|-----------|--------------------|--------------|-----------|
| US system | Green              | White        | Black     |
| EU system | Yellow/green       | Blue         | Brown     |

Power can be relayed from one fixture to another device in a daisy-chain via the PowerCon throughput socket. Do not connect devices to power in a chain that will exceed the power and current ratings of any cable or connector used in the chain. Do not connect more than five (5) RUSH MH 4 fixtures to power in a chain at 100-

120 V. Do not connect more than ten (10) RUSH MH 4 fixtures to power in a chain at 200-240 V.

## Fixture overview



### 1 - LEDs

The fixture has four LEDs on the front of the base: two are reserved for future use; the other two are marked as follows:

|       |                          |
|-------|--------------------------|
| Power | Power on                 |
| DMX   | Valid DMX signal present |

### 2 – Display

### 3 – Buttons

|       |  |
|-------|--|
| MENU  | <ul style="list-style-type: none"><li>• Activate the menu mode functions, or</li><li>• Return to the previous level of the menu structure, or</li><li>• Press and hold to exit the menus</li></ul> |
| DOWN  | Go down a menu branch  |
| UP    | Go up a menu branch  |
| ENTER | Confirm the selected menu item   |

### 4 - DMX XLR input/output sockets:

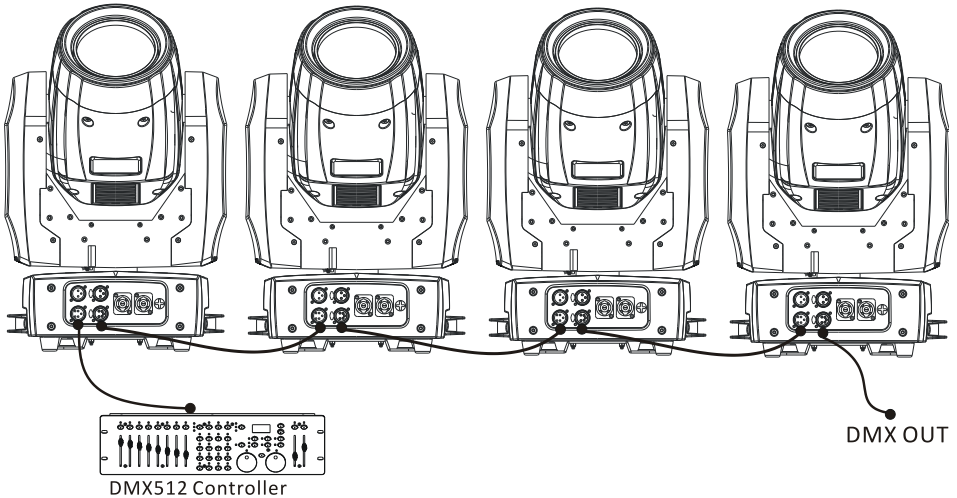
### 5 – AC mains power IN

### 6 – AC Mains power OUT

### 7 – Primary (mains power) fuse F1

## DMX data link

A DMX 512 control data link is required in order to control the fixture via DMX. The fixture has 3-pin and 5-pin XLR connectors for DMX data input and output (throughput).



The number of daisy-chained fixtures is limited by the number of DMX channels required by the fixtures in relation to the maximum 512 channels available in one DMX universe. Note that if independent control of a fixture is required, it must have its own DMX channels. Fixtures that are required to behave identically can share the same DMX address and channels. To add more fixtures or groups of fixtures when the above limit is reached, add a DMX universe and another daisy-chained link.

Note that if a fixture loses its DMX signal it will maintain its current effect until powered off or reset.

### ***Tips for reliable data transmission***

Use shielded twisted-pair cable designed for RS-485 devices: standard microphone cable cannot transmit control data reliably over long runs. 24 AWG cable is suitable for runs up to 300 meters (1000 ft.). Heavier gauge cable and/or an amplifier is recommended for longer runs. The pin-out on all connectors is pin 1 = shield, pin 2 = cold (-), and pin 3 = hot (+). Pins 4 and 5 in the 5-pin XLR connectors are not used in the fixture but are available for possible additional data signals as required by the DMX512-A standard. Standard pin-out is pin 4 = data 2 cold (-) and pin 5 = data 2 hot (+).

To split the link into branches, use a splitter such as the Martin DMX 5.3 Splitter™ or Martin RDM 5.5 Splitter™. Terminate the link by installing a termination plug in the output socket of the last fixture. The termination plug, which is a male XLR plug with a 120 Ohm, 0.25-Watt resistor soldered between pins 2 and 3, “soaks up” the control signal so it does not reflect and cause interference. If a splitter is used, terminate each branch of the link.

## Connecting the data link

To connect the fixture to data:

1. Connect the DMX data output from the controller to the closest fixture’s male XLR DMX input connector.
2. Connect the DMX output of the fixture closest to the controller to the DMX input of the next fixture and continue connecting fixtures output to input. Terminate the last fixture on the link.

## Fixture setup

This section explains the options available to change the fixture’s settings. Settings are made using the menus available in the control panel and are retained even when the fixture is powered off.

A complete map of the control menu structure and brief explanations of their purposes can be found in Control menus on page 33.

## Using the control panel

- To access the control menus in the control panel, press the MENU button.
- Navigate the menu structure using the ENTER, UP and DOWN buttons.
- Scroll between menu options using the UP and DOWN buttons.
- Confirm your selection of a menu option using the ENTER button.
- To return to the previous level in the menu structure without making a change, press the MENU button.
- To exit the menus, press and hold the MENU button.

## DMX function settings

DMX function settings include the DMX address and DMX mode.

### *DMX addressing*

The fixture can be controlled using signals sent by a DMX controller over 15 DMX channels. The DMX address, also known as the start channel, is the first channel

used to receive instructions from a DMX controller. Each DMX-controlled fixture must have a DMX address set. If a fixture has its DMX address set to 1, then it uses channels 1 to 15. The following fixture in the DMX chain can then be set to a DMX address of 16.

For independent control, each fixture must be assigned its own DMX channels. Two fixtures of the same type may share the same address, if identical behavior is desired. Address sharing can be useful for diagnostic purposes and symmetric control, particularly when combined with the inverse pan and tilt options.

To set the fixture's DMX address:

1. Select DMX FUNCTIONS in the control panel and press ENTER.
2. Use the UP and DOWN buttons to select DMX ADDRESS and press ENTER. The current address will blink on the display.
3. Use the UP and DOWN buttons to select a new address (1 to 512).
4. Once the address has been selected, press ENTER to set it (or to return to the previous menu level without making a change, press MENU).

### ***Viewing DMX values received***

DMX FUNCTIONS → View DMX value lets you see the DMX values the fixture is receiving on each of the DMX channels.

## **Fixture settings**

### ***Pan and/or tilt inversion***

The FIXTURE SETTINGS → PAN INVERSE and TILT INVERSE menus let you remap the fixture so that the direction of pan and/or tilt are reversed. These settings are useful for symmetrical effects with multiple fixtures, or when coordinating the movement of fixtures that are floor-mounted and rigged upside down.

### ***Pan/tilt feedback***

If you enable pan and tilt feedback in the FIXTURE SETTINGS → P/T FEEDBACK menu, the fixture will correct its pan and tilt positions if it detects a position error.

### ***Blackout during effect changes or movement***

You can set the fixture to deploy the shutter to black out light output during pan and tilt movement, gobo changes and/or color changes. Blackouts are disabled by default.

## **Lamp settings**

### ***Lamp on/off***

To manually power the lamp on or off:

1. Select LAMP SETTINGS and press ENTER to confirm.
2. Use the DOWN and UP buttons to scroll to ON/OFF and press ENTER to confirm.
3. Use the DOWN and UP buttons to select ON or OFF.
4. Press ENTER to confirm and power the lamp on or off (or to return to the previous level of the menu structure without making a change, press MENU).

### ***State/power on***

To set the lamp to power on automatically when the fixture is powered on:

1. Select LAMP SETTINGS and press ENTER to confirm.
2. Use the DOWN and UP buttons to select STATE/POWER ON and press ENTER to confirm.
3. Use the DOWN and UP buttons to select ON or OFF.
4. Press ENTER to confirm (or to return to the previous menu level without making a change, press MENU).

### ***DMX lamp control***

The lamp can be controlled remotely by DMX. The following options are available:

- OFF VIA DMX allows the lamp to be powered off by sending a DMX command.
- ON IF DMX ON sets the lamp to be powered on as soon as a DMX signal is present.
- OFF IF DMX OFF sets the lamp to be powered off automatically as soon as a DMX signal is not present

### ***Ignition delay***

An ignition delay of 0 to 255 seconds can be set, so that there is a delay between power on and lamp on:

1. Select LAMP SETTINGS and press ENTER to confirm.
2. Use the DOWN and UP buttons to select IGNITION DELAY and press ENTER to confirm.
3. Use the DOWN and UP buttons to specify a delay duration in seconds.
4. Press ENTER to confirm (or to return to the previous menu level without making a change, press MENU).

## ***Low power delay***

In a low-power delay, when a lamp off command is sent the lamp runs at half power for a period before powering completely off:

1. Select LAMP SETTINGS and press ENTER to confirm.
2. Use the DOWN and UP buttons to select LOW POWER DELAY and press ENTER to confirm.
3. Use the DOWN and UP buttons to specify a duration.
4. Press ENTER to confirm (or to return to the previous menu level without making a change, press MENU).

## **Display settings**

### ***Invert display***

Inverting the display is useful if the fixture is hung from a truss or from elevation. To invert the display:

1. Select DISPLAY SETTINGS and press ENTER to confirm.
2. Use the DOWN and UP buttons to select DISPLAY INVERSE and press ENTER to confirm.
3. Use the DOWN and UP buttons to select the YES (invert).
4. Press ENTER to confirm (or to return to the previous menu level without making a change, press MENU).

### ***Automatically turn off display backlight***

By default the display is lit when the power is applied to the fixture. It can be set to automatically dim if the buttons and menus have not been used for a period:

1. Select DISPLAY SETTINGS and press ENTER to confirm.
2. Use the DOWN and UP buttons to select BACKLIGHT AUTO OFF and press ENTER to confirm.
3. Use the DOWN and UP buttons to select YES to enable automatic dimming.
4. Press ENTER to confirm (or to return to the previous menu level without making a change, press MENU).

### ***Adjust backlight intensity***

The brightness of the control panel display can be adjusted:

1. Select DISPLAY SETTINGS and press ENTER to confirm.
2. Use the DOWN and UP buttons to select BACKLIGHT INTENSITY and press ENTER to confirm.
3. Use the DOWN and UP buttons to set a level from 1 to 10.
4. Press ENTER to confirm (or to return to the previous menu level without making a change, press MENU).



## ***Display panel contrast***

To adjust the contrast of the control panel display to get the clearest readout:

1. Select DISPLAY SETTINGS and press ENTER to confirm.
2. Use the DOWN and UP buttons to adjust the intensity ratio from 1 (dark) to 30 (bright) and press ENTER to confirm.
3. Press MENU to return to the previous menu level or let the unit idle one minute to exit menu mode.

## ***Temperature Celsius/Fahrenheit***

To set temperatures to display in Celsius or Fahrenheit

1. Select TEMPERATURE UNIT and press ENTER to confirm.
2. Use DOWN and UP buttons to select ° C or ° F and press ENTER to store.
3. Press MENU to return to the previous menu level or let the unit idle one minute to exit menu mode.

## ***Display warnings***

To enable or disable error messages in the display if the fixture detects an error:

1. Select DISPLAY WARNING and press ENTER to confirm.
2. Use the DOWN and UP buttons to select YES or NO and press ENTER to confirm.
3. Press MENU to return to the previous menu level or let the unit idle one minute to exit menu mode.

## **Fixture tests**

The fixture can carry out an automatic test of all functions, or individual functions can be tested manually.

### ***Auto test***

To perform a complete test of all of the effects:

1. Select FIXTURE TEST and press ENTER to confirm.
2. Use the DOWN and UP buttons to select AUTO TEST and press ENTER to confirm. The fixture will run an automatic test sequence of all the effects.

### ***Manual test (manual control of individual effects)***

To test individual effects:

1. Select FIXTURE TEST and press ENTER to confirm.
2. Use the DOWN and UP buttons to select MANUAL TEST and press ENTER to confirm.

3. Select the function you want to test and press ENTER to confirm. You can now test that function.
4. To return to the previous menu level, press MENU.

## **Fixture information**

### ***Fixture operating hours counter***

To see how many hours the fixture has been used since manufacture:

1. Select FIXTURE INFORMATION and press ENTER to confirm.
2. Use the DOWN and UP buttons to select FIXTURE USE TIME and press ENTER to confirm. The number of hours will be shown.

### ***Lamp operating hours counter (resettable)***

This counter can be reset. It can be used to monitor the number of lamp operating hours and help you decide when a lamp change is required.

1. Select FIXTURE INFORMATION and press ENTER to confirm.
2. Use the DOWN and UP buttons to select LAMP ON TIME and press ENTER to confirm. The fixture will display the number of hours the lamp has been on since the counter was last reset.
3. Use the DOWN and UP buttons to select EXIT to leave the lamp hours menu or RESET TIME to reset the lamp hours counter to zero. Press ENTER to confirm.

### ***Firmware version***

To see which software version is installed in the fixture:

1. Select FIXTURE INFORMATION and press ENTER to confirm.
2. Use the DOWN and UP buttons to select FIRMWARE VERSION and press ENTER to confirm. The firmware version will be shown.

### ***Reset functions or effects***

The various effects—pan, tilt color, gobos, focus, prism—or all effects, can be manually reset to their home positions:

1. Select RESET FUNCTIONS and press ENTER to confirm.
2. Use the DOWN and UP buttons to select the function or effect that is to be reset. Press the ENTER button.
3. Use the DOWN and UP buttons to select YES and press ENTER to confirm (or to return to the previous menu level without making a change, press MENU).

## Special functions

### ***Fixture maintenance***

You can schedule fixture maintenance by setting an interval in hours until the next service must be carried out. You can then view the number of hours remaining until this interval has been reached:

1. Select FIXTURE MAINTENANCE and press ENTER to confirm.
2. Use the DOWN and UP buttons to select INTERVAL or REMAIN TIME.

#### **Interval**

1. Select INTERVAL and press ENTER to confirm. The interval time will show on the display.
2. Press MENU button to exit.

#### **Remain Time**

1. Select Remain Time and press ENTER to confirm. The remaining time will show on the display.
2. Press ENTER, then use the DOWN and UP buttons to select EXIT or RESET TIME. EXIT returns to the previous menu without changing the remaining time. RESET TIME restarts the timer countdown at the number of hours defined in INTERVAL.
3. Press ENTER to confirm or press MENU to exit.

### ***Factory settings***

The fixture's factory default settings can be restored using FACTORY SETTINGS.

### **Effect home position adjustment**

The various effects—pan, tilt, shutter, color, gobo, prism, rotating prism and focus—can lose or move out of their indexed home position. To reset any of these:

1. In the menu structure, press ENTER and hold for at least 3 seconds to enter the OFFSET MENU.
2. Use the DOWN and UP buttons to choose the function that needs to be adjusted. Press ENTER to select it.
3. The present indexed home position will flash in the display. Use the DOWN and UP buttons to adjust the home position of the function or effect.
4. Once the correct position has been reached, press ENTER to set this (or to return to the previous menu level without making a change, press MENU).

# Effects

This section describes DMX-controllable effects that require particular explanation. See DMX protocol on page 26 for a full list of the DMX channels and values required to control the different effects.

## Lamp control

For maximum lamp operating life:

- Avoid powering the lamp off until it has warmed up for at least 5 minutes.
- Before shutting down power completely, douse the lamp but leave power applied for a few minutes so that cooling fans can prevent any momentary lamp temperature increase caused by heat from surrounding components.

The fixture can be set to automatically turn the lamp on or off depending on whether or not a DMX signal is present.

The fixture can also be set to respond to or ignore lamp off commands sent via DMX.

An ignition delay of 0 to 255 seconds can be set, so that there is a delay between power on and lamp on.

A low-power delay of 0 to 255 seconds can be set, so that when a lamp off command is sent the lamp runs at half power for a user-defined period before shutting down.

For more information, see 'Lamp settings' on page 15.

## Pan and tilt

The fixture's moving head can be panned through 540° and tilted through 270° using coarse or fine control channels. The fixture can be set to automatically blackout during pan and tilt movement.

The fixture incorporates pan and tilt feedback, so that if a pan or tilt position error is detected, the shutter closes and the fixture resets to the correct position. This can be enabled or disabled as required (see 'Control menus' on page 31).

## Dimming

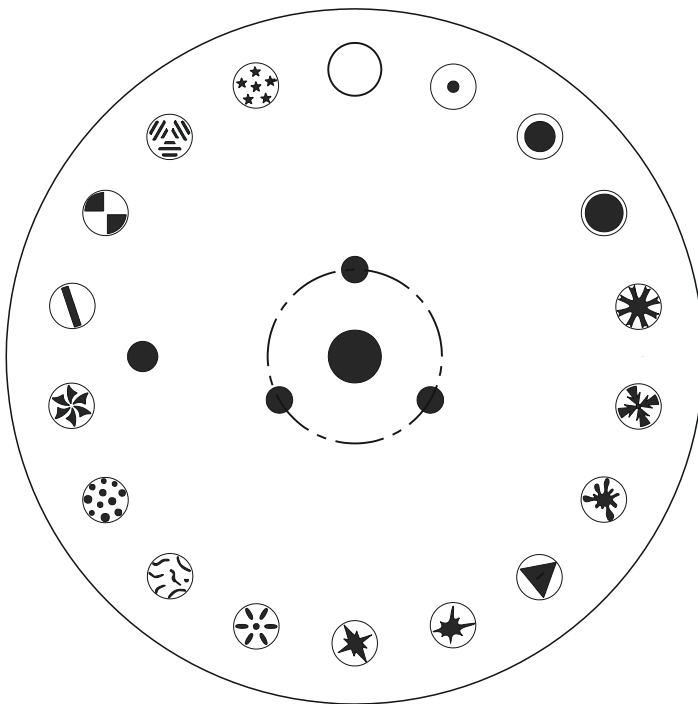
Full range mechanical dimming is provided.

## Strobe effects

A range of variable strobe and pulse effects are available, with variable speed and random effects.

# Gobos

The fixture contains a rotating wheel with 17 fixed gobos plus open (white):



Any gobo can be projected, with split gobos also possible, or the wheel can be rotated clockwise or counter-clockwise at variable speeds. The sharpness of gobo projections can be adjusted using the Focus adjustment DMX channel.

The fixture can be set to automatically black out during gobo changes.

# Prism

The fixture incorporates a 6-facet prism that can be inserted into the beam to provide split effects. The prism can be set to an indexed position or rotated clockwise or counter-clockwise.

# Color wheel

The fixture incorporates a single color wheel with 14 color filters plus open. The colors can be individually selected, split colors are available, and the wheel can be rotated at varying speeds clockwise and counter-clockwise.

The filters installed as standard in the color wheel are as follows:

|        |             |         |              |
|--------|-------------|---------|--------------|
| Open   |             |         |              |
| Slot 1 | Red         | Slot 8  | Light yellow |
| Slot 2 | Amber       | Slot 9  | Magenta      |
| Slot 3 | Blue        | Slot 10 | Deep blue    |
| Slot 4 | Green       | Slot 11 | Yellow       |
| Slot 5 | Light green | Slot 12 | CTO          |
| Slot 6 | Lavender    | Slot 13 | CTB          |
| Slot 7 | Pink        | Slot 14 | Violet       |

The fixture can be set to automatically black out during color changes.

# Maintenance



Warning! Read 'Safety Information' on page 5 before servicing the fixture. Always comply with the safety instructions.

Refer any service operation not described in this user manual to a qualified service technician.

Disconnect mains power before cleaning or servicing the fixture.

Service the fixtures in an area where there is no risk of injury from falling parts, tools or other materials.

Excessive dust, smoke fluid, and particle buildup degrades performance, causes overheating and will damage the fixture. Damage caused by inadequate cleaning or maintenance is not covered by the product warranty.

## Changing the lamp



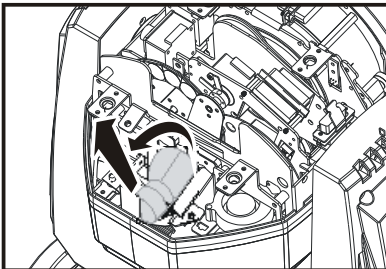
Warning! Read '**Lamp safety**' on page 6 before servicing the lamp.

To avoid the risk of a discharge lamp exploding in the fixture, always replace the lamp before its expected lifespan has been exceeded.

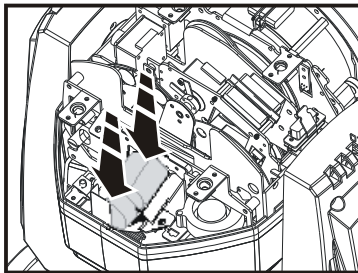
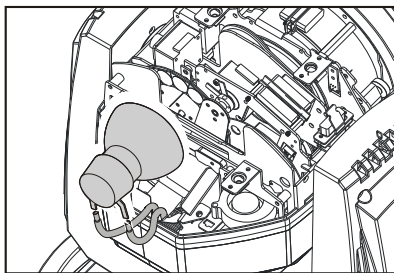
The lamp must be perfectly clean. Never touch the lamp with bare hands. If this happens, clean the lamp with an alcohol wipe and dry it with a lint-free cloth.

To replace the lamp:

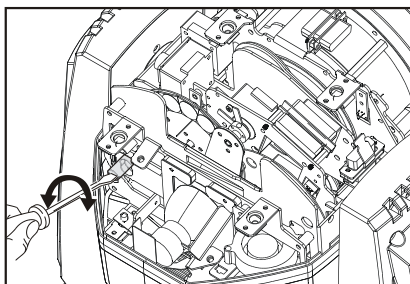
1. If the fixture has been in use, power the lamp off but leave the fixture powered on for at least 10 minutes so that the cooling fans cool the lamp. Disconnect the fixture from power and allow to cool down completely.
2. Remove the fixture head covers using a Phillips screwdriver.



3. Lift the lamp out of its recess.
4. Disconnect the lamp and connect the replacement lamp. Use an approved lamp only.



5. Place the new lamp into the lamp recess.
6. The lamp can be adjusted using a slotted (flat head) screwdriver. Ensure that the lamp is located in the center of the reflector for the best projection.



7. Reinstall and fasten the head covers.
8. Remember to reset the lamp hours counter using the control panel.

## Cleaning

The cleaning of external optical lenses must be carried out periodically to optimize light output. Cleaning schedules for lighting fixtures vary greatly depending on the operating environment. It is therefore impossible to specify precise cleaning intervals for the fixture. Environmental factors that may result in a need for frequent cleaning include:

- Use of smoke or fog machines.
- High airflow rates (near air conditioning vents, for example).
- Presence of cigarette smoke.
- Airborne dust (from stage effects, building structures and fittings or the natural environment at outdoor events, for example).

If one or more of these factors is present, inspect fixtures within their first 100 hours of operation to see whether cleaning is necessary. Check again at frequent intervals. This procedure will allow you to assess cleaning requirements in your particular situation. If in doubt, consult your RUSH by Martin dealer about a suitable maintenance schedule.



Use gentle pressure only when cleaning, and work in a clean, well-lit area. Do not use any product that contains solvents or abrasives, as these can cause surface damage.

To clean the fixture:

1. Disconnect the fixture from power and allow it to cool for at least 10 minutes.
2. Vacuum or gently blow away dust and loose particles from the outside of the fixture and the air vents at the back and sides of the head and in the base with low-pressure compressed air.
3. Clean optical components by wiping gently with a soft, clean lint-free cloth moistened with a weak detergent solution. Do not rub the surface hard: lift particles off with a soft repeated press. Dry with a soft, clean, lint-free cloth or low-pressure compressed air. Remove stuck particles with an unscented tissue or cotton swab moistened with glass cleaner or distilled water.
4. Check that the fixture is dry before reapplying power.

## **Changing the primary fuse**

If the fixture is completely dead, the fixture's primary fuse F1 may have blown and it may be necessary to install a new fuse. This fuse is located in a fuseholder next to the Mains OUT socket on the connections panel. See 7 in 'Fixture overview' on page 11. To change the fuse:

1. Disconnect the fixture's power input cable.
2. Use a large flat-bladed screwdriver to open the fuseholder.
3. Replace the fuse with one of the same type and rating only.
4. Reinstall the fuseholder before reapplying power.

## **Service and repairs**

There are no user serviceable parts inside the fixture. Do not open the housing. Never try to repair the fixture by yourself as this may result in damage or malfunction, and it may potentially void your product warranty. The fixture must be serviced or repaired by an authorized RUSH by Martin™ service technician only.

Installation, on-site service and maintenance can be provided worldwide by the Martin Professional Global Service organization and its approved agents, giving owners access to Martin's expertise and product knowledge in a partnership that will ensure the highest level of performance throughout the product's lifetime. Please contact your RUSH by Martin™ supplier for details.

# DMX protocol

| Channel | Value   | Function   | Fade type | De-fault |
|---------|---|--|-----------|----------|
| 1       | 0-255   | Dimming coarse 0→100%  | Fade      | 0        |
| 2       | 0-255   | Dimming fine   | Fade      | 0        |
| 3       | 0-7<br>8-15<br>16-131<br>132-167<br>168-203<br>204-239<br>240-247<br>248-255  | <b>Shutter</b><br>Closed<br>Open<br>Shutter strobe effect, slow → fast<br>Fast close, slow open<br>Slow close, fast open<br>Pulse open and close<br>Shutter strobe effect, random strobe<br>Open   | Snap      | 12       |
| 4       | 0<br>1-10<br>11<br>12-21<br>22<br>23-32<br>33<br>34-43<br>44<br>45-54<br>55<br>56-65<br>66<br>67-76<br>77<br>78-87<br>88<br>89-98<br>99<br>100-109<br>110<br>111-120<br>121<br>122-131<br>132 | <b>Color wheel: continuous scrolling</b><br>Open<br>Open → Red<br>Red<br>Red → Amber<br>Amber<br>Amber → Blue<br>Blue<br>Blue → Green<br>Green<br>Green → Light green<br>Light green<br>Light green → Lavender<br>Lavender<br>Lavender → Pink<br>Pink<br>Pink → Light yellow<br>Light yellow<br>Light yellow → Magenta<br>Magenta<br>Magenta → Deep blue<br>Deep blue<br>Deep blue → Yellow<br>Yellow<br>Yellow → CTO<br>CTO | Snap      | 0        |

| Channel | Value   | Function  | Fade type | De-<br>fault |
|---------|---|---|-----------|--------------|
|         | 133-142<br>143<br>144-153<br>154<br>155-159<br>160<br><br>161-162<br>163-164<br>165-166<br>167-167<br>169-170<br>171-172<br>173-174<br>175-176<br>177-178<br>179-180<br>181-182<br>183-184<br>185-186<br>187-188<br>189-192<br><br>193-214<br>215-221<br>222-243<br><br>244-247<br>248-251<br>252-255 | CTO → CTB<br>CTB<br>CTB → Violet<br>Violet<br>Violet → Open<br>Open<br><b>Color wheel: stepped scrolling</b><br>Red<br>Amber<br>Blue<br>Green<br>Light green<br>Lavender<br>Pink<br>Light yellow<br>Magenta<br>Deep blue<br>Yellow<br>CTO<br>CTB<br>Violet<br>Open<br><b>Color wheel: continuous rotation</b><br>Clockwise rotation fast → slow<br>Stop (wheel stops at current position)<br>Counter-clockwise rotation slow → fast<br><b>Color wheel: random slots</b><br>Random color, fast<br>Random color, medium<br>Random color, slow |           |              |
| 5       | 0<br>1-8<br>9<br>10-17<br>18<br>19-26<br>27<br>28-35<br>36<br>37-44<br>45   | <b>Gobo wheel: continuous scrolling</b><br>Open<br>Open → Gobo 1<br>Gobo 1<br>Gobo 1 → Gobo 2<br>Gobo 2<br>Gobo 2 → Gobo 3<br>Gobo 3<br>Gobo 3 → Gobo 4<br>Gobo 4<br>Gobo 4 → Gobo 5<br>Gobo 5  | Snap      | 0            |

| Channel | Value   | Function                             | Fade type | De-<br>fault |
|---------|---------|--------------------------------------|-----------|--------------|
|         | 46-53   | Gobo 5 → Gobo 6                      |           |              |
|         | 54      | Gobo 6                               |           |              |
|         | 55-62   | Gobo 6 → Gobo 7                      |           |              |
|         | 63      | Gobo 7                               |           |              |
|         | 64-71   | Gobo 7 → Gobo 8                      |           |              |
|         | 72      | Gobo 8                               |           |              |
|         | 73-80   | Gobo 8 → Gobo 9                      |           |              |
|         | 81      | Gobo 9                               |           |              |
|         | 82-89   | Gobo 9 → Gobo 10                     |           |              |
|         | 90      | Gobo 10                              |           |              |
|         | 91-98   | Gobo 10 → Gobo 11                    |           |              |
|         | 99      | Gobo 11                              |           |              |
|         | 100-107 | Gobo 11 → Gobo 12                    |           |              |
|         | 108     | Gobo 12                              |           |              |
|         | 109-116 | Gobo 12 → Gobo 13                    |           |              |
|         | 117     | Gobo 13                              |           |              |
|         | 118-125 | Gobo 13 → Gobo 14                    |           |              |
|         | 126     | Gobo 14                              |           |              |
|         | 127-134 | Gobo 14 → Gobo 15                    |           |              |
|         | 135     | Gobo 15                              |           |              |
|         | 136-143 | Gobo 15 → Gobo 16                    |           |              |
|         | 144     | Gobo 16                              |           |              |
|         | 145-152 | Gobo 16 → Gobo 17                    |           |              |
|         | 153     | Gobo 17                              |           |              |
|         | 154-156 | Gobo 17 → Open                       |           |              |
|         |         | <b>Gobo wheel: stepped scrolling</b> |           |              |
|         | 157-158 | Gobo 1                               |           |              |
|         | 159-160 | Gobo 2                               |           |              |
|         | 161-162 | Gobo 3                               |           |              |
|         | 163-164 | Gobo 4                               |           |              |
|         | 165-166 | Gobo 5                               |           |              |
|         | 167-168 | Gobo 6                               |           |              |
|         | 169-170 | Gobo 7                               |           |              |
|         | 171-172 | Gobo 8                               |           |              |
|         | 173-174 | Gobo 9                               |           |              |
|         | 175-176 | Gobo 10                              |           |              |
|         | 177-178 | Gobo 11                              |           |              |
|         | 179-180 | Gobo 12                              |           |              |
|         | 181-182 | Gobo 13                              |           |              |
|         | 183-184 | Gobo 14                              |           |              |
|         | 185-186 | Gobo 15                              |           |              |
|         | 187-188 | Gobo 16                              |           |              |

| Channel | Value  | Function   | Fade type | De-fault |
|---------|--|--|-----------|----------|
|         | 189-190<br>191-192<br><br>193-214<br>215-221<br>222-243<br><br>244-247<br>248-251<br>252-255 | Gobo 17<br>Open<br><b>Gobo wheel: continuous rotation</b><br>Clockwise rotation fast → slow<br>Stop (wheel stops at current position)<br>CCW rotation slow → fast<br><b>Gobo wheel: random gobos</b><br>Random gobo, fast<br>Random gobo, medium<br>Random gobo, slow                                    |           |          |
| 6       | 0-10<br>11-138<br>139-255  | <b>Prism</b><br>Open<br>Prism indexing (control on next channel)<br>Prism rotation (control on next channel)   | Snap      | 0        |
| 7       | 0-255<br><br>0-2<br>3-126<br>127-129<br>130-253<br>254-255                                   | <b>Prism Indexing control</b><br>Indexed position (128 = prism indexed at 0°)<br><b>Prism Rotation control</b><br>No rotation (prism indexed at 0°)<br>Rotation CW fast → CW Slow<br>No rotation (prism stops at current position)<br>Rotation CCW Slow → CCW Fast<br>No rotation (prism indexed at 45°) | Fade      | 128      |
| 8       | 0-255  | <b>Focus</b> Infinity → Near   | Fade      | 128      |
| 9       | 0-255  | Pan coarse 0° → 540°   | Fade      | 128      |
| 10      | 0-255  | Pan fine   | Fade      | 0        |
| 11      | 0-255  | Tilt coarse 0° → 270°  | Fade      | 128      |
| 12      | 0-255  | Tilt fine  | Fade      | 0        |
| 13      | 0-9<br>1-14<br>15-19<br>20-24<br>25-29<br>30-34<br>35-39<br>40-44<br>45-49<br>50-54          | <b>Fixture control</b><br>No function (disables calibration)<br>Reset fixture<br>Reset dimmer/shutter<br>Reset color<br>Reset gobos<br>Reset pan and tilt<br>Reset focus<br>Lamp on<br>Lamp off<br><i>No function</i>  | Snap      | 0        |

| Channel | Value   | Function   | Fade type | De-fault |
|---------|---------|--|-----------|----------|
|         | 55-59   | Enable calibration                               |           |          |
|         | 60-79   | <i>No function</i>                               |           |          |
|         | 80-84   | Pan & tilt speed = Normal                        |           |          |
|         | 85-89   | Pan & tilt speed = Fast (default)                |           |          |
|         | 90-94   | Pan & tilt speed = Slow                          |           |          |
|         | 95-99   | Effect shortcuts = On (default)                  |           |          |
|         | 100-104 | Effect shortcuts = Off                           |           |          |
|         | 105-144 | <i>No function</i>                               |           |          |
|         | 145-149 | Auto-blackout = On                               |           |          |
|         | 150-154 | Auto-blackout = Off (default)                    |           |          |
|         | 155-159 | Illuminate control panel display                 |           |          |
|         | 160-164 | Turn off control panel display                   |           |          |
|         | 165-209 | <i>No function</i>                               |           |          |
|         | 210-214 | Store dimmer calibration                         |           |          |
|         | 215-219 | Store gobo wheel calibration                     |           |          |
|         | 220-224 | Store focus calibration                          |           |          |
|         | 225-229 | Store color wheel calibration                    |           |          |
|         | 230-234 | Store prism calibration                          |           |          |
|         | 235-239 | Store pan calibration                            |           |          |
|         | 240-244 | Store tilt calibration                           |           |          |
|         | 245-249 | Reset ALL calibration values to factory defaults |           |          |
|         | 250-255 | <i>No function</i>                               |           |          |

# Control menus

To access the control menus, press the MENU button. Use the UP and DOWN buttons to navigate the menus. Select any required menu option using the ENTER button. For more information, see 'Using the control panel' on page 13.

Default fixture settings are shown in **bold**.

| Menu            | Sub-menu           | Setting/<br>value | Explanation   |
|-----------------|--------------------|-------------------|---|
| DMX Functions   | DMX Address        | <b>1-512</b>      | Set fixture's DMX address   |
|                 | DMX Channel Mode   |                   | <i>Reserved for future use</i>  |
|                 | View DMX Value     |                   | View DMX values received  |
| Fixture setting | Pan Inverse        | <b>No</b>         | Invert pan movement left to right   |
|                 |                    | Yes               |   |
|                 | Tilt Inverse       | <b>No</b>         | Invert tilt movement up to down   |
|                 |                    | Yes               |   |
|                 | P/T Feedback       | <b>No</b>         | If a pan or tilt position error is detected, the fixture corrects pan/tilt position |
|                 |                    | Yes               |   |
|                 | Bl.O. P/T Moving   | <b>No</b>         | Blackout during pan or tilt movement  |
|                 |                    | Yes               |   |
|                 | Bl.O. Color Change | <b>No</b>         | Blackout during color change  |
|                 |                    | Yes               |   |
|                 | Bl.O. Gobo Change  | <b>No</b>         | Blackout during gobo change   |
|                 |                    | Yes               |   |

|                     |                     |            |   |
|---------------------|---------------------|------------|---|
| Lamp Setting        | On/Off              | Off        | Manually power lamp on or off                                   |
|                     |                     | On         |   |
|                     | State/Power On      | Off        | Lamp powers on automatically when fixture is powered on         |
|                     |                     | On         |   |
|                     | Off via DMX         | No         | Lamp can be powered off via DMX                                 |
|                     |                     | Yes        |   |
|                     | On if DMX On        | No         | Lamp powers on if DMX signal received                           |
|                     |                     | Yes        |   |
| Display settings    | Off if DMX Off      | No         | Lamp powers off if DMX signal not received                      |
|                     |                     | Yes        |   |
|                     | Ignition Delay      | 0-255S     | Delay lamp ignition: 0 to 255 seconds.                          |
|                     | Low Power Delay     | 0-255S     | Low power delay: 0 to 255 seconds.                              |
|                     | Display inverse     | No         | Invert control panel display                                    |
|                     |                     | Yes        |   |
|                     | Backlight Auto Off  | No         | Automatically turn off display panel backlight when not in use. |
|                     |                     | Yes        |   |
| Fixture Test        | Backlight Intensity | 1-10       | Set display panel backlight intensity                           |
|                     | Contrast            | 1-30       | Set display panel contrast                                      |
|                     | Temperature Unit    | °C         | Temperature display Celsius/Fahrenheit                          |
|                     |                     | °F         |   |
|                     | Display Warning     | No         | Show service warnings in display panel                          |
|                     |                     | Yes        |   |
|                     | Auto Test           |            | Automatic test of all functions                                 |
| Fixture Information | Manual Test         |            | Manual test of each function                                    |
|                     | Fixture Use Time    |            | Total operating hours since manufacture                         |
|                     |                     | Exit       |   |
|                     | Lamp On Time        | Reset Time | Reset lamp hour use counter                                     |
|                     | Firmware Version    |            | Currently installed firmware version                            |
|                     |                     |            |   |



|                   |                     |             |  |
|-------------------|---------------------|-------------|--|
| Reset Functions   | Pan/Tilt            | No          | Reset pan and tilt                         |
|                   |                     | Yes         |  |
|                   | Shutter/Dimmer      | No          | Reset shutter/dimmer                       |
|                   |                     | Yes         |  |
|                   | Color               | No          | Reset color wheel                          |
|                   |                     | Yes         |  |
|                   | Gobo                | No          | Reset gobo wheel                           |
|                   |                     | Yes         |  |
|                   | Focus               | No          | Reset focus                                |
|                   |                     | Yes         |  |
|                   | All                 | No          | Reset all effects                          |
|                   |                     | Yes         |  |
| Special Functions | Fixture Maintenance | Interval    | Set new maintenance countdown timer period |
|                   |                     | Remain time | View maintenance countdown timer           |
|                   | Factory Settings    | No          | Return fixture to factory default settings |
|                   |                     | Yes         |  |

# Offset menu

The offset menu is used to adjust the home position of the various effects.

To access the Offset menu, press the MENU button to enter the menu structure and then press and hold ENTER for three seconds.

| Menu        | Sub-menu | Setting  | Explanation           |
|-------------|----------|----------|-----------------------|
| Offset Menu | Pan      | -128→127 | Pan offset            |
|             | Tilt     | -128→127 | Tilt offset           |
|             | Shutter  | 0→255    | Shutter offset        |
|             | Color    | -128→127 | Color offset          |
|             | Gobo     | -128→127 | Gobo offset           |
|             | Prism    | 0→255    | Prism offset          |
|             | R-Prism  | -128→127 | Rotating prism offset |
|             | Focus    | 0→255    | Focus offset          |

# Error messages

| Error:   | Appears when:   |
|--|---|
| Lamp Startup Fail  | No lamp detected or wiring fault.   |
| Temperature Sense Error  | Temperature sensor on the PCB is damaged.   |
| Lamp Too Hot Low Power   | Temperature higher than 105° C detected. The fixture runs at a low power level.   |
| Lamp Too Hot Power Off   | Temperature higher than 110° C detected. Check that ambient temperature does not exceed 40° C. Check that the fixture is adequately ventilated. The fans or temperature sensor might be damaged (contact Martin support). |
| Maintenance Fixture  | Service countdown timer has reached zero. Service the fixture, then reset the countdown countdown timer in the control menu.  |
| Lamp On Over 700 Hour  | The lamp has had more than 700 hours of use. Power the fixture off and replace the lamp.  |
| Memory Initial Fail  | Damaged memory IC (contact Martin support).   |
| CPU-B Error<br>CPU-C Error<br>CPU-D Error  | CPU, PCB or fixture wiring is damaged (contact Martin support).   |
| Pan Reset Error<br>Pan Encode Error<br>Tilt Reset Error<br>Tilt Encode Error<br>Shutter Reset Fail<br>Dimmer Reset Fail<br>Color Reset Fail<br>Gobo Reset Fail<br>Focus Reset Fail | These can appear when powering on or resetting the fixture and can indicate damage to sensors or components (contact Martin support).   |

# Troubleshooting

This section describes a few common problems that may occur during operation and provides some suggestions for easy troubleshooting:

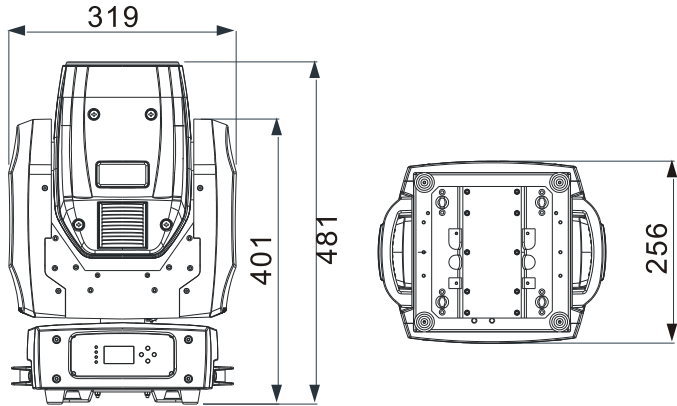
| Symptom  | Potential cause   | Remedies  |
|--|---|---|
| No light from fixture, or fans not working.                                  | Power supply issue, such as blown fuse, faulty connector or damaged cable.  | <p>Check that mains supply is connected and supplying power to the fixture.</p> <p>Check that fixture's Power indicator LED is lit.</p> <p>Check all power connections and cables.</p> <p>Replace fixture's primary fuse.</p>   |
| One of the control channels is unresponsive or only responds intermittently. | Damaged step motor or cable connection between the head and body.   | Contact your RUSH by Martin™ authorized distributor or service center for assistance.   |
| Lamp cuts out intermittently   | Incorrect mains voltage or the internal temperature is too high.  | <p>Check mains voltage.</p> <p>Fan may need replacing. Contact your RUSH by Martin™ authorized distributor or service center for assistance.</p>  |
| Fixture does not respond to DMX control.                                     | <p>Fault on DMX link due to damaged connector or cable, or</p> <p>incorrect DMX addressing, or</p> <p>potential interference from proximity to a high voltage installation.</p> | <p>Check that fixture's DMX indicator LED is on, and if not, check all DMX cables and connections.</p> <p>Check that DMX link is terminated.</p> <p>Check that all devices on DMX link use standard DMX polarity.</p> <p>Check that fixture's DMX address matches address</p> |

| Symptom | Potential cause | Remedies  |
|---------|-----------------|---|
|         |                 | <p>set on DMX control device.</p> <p>Test fixture with another DMX control device.</p> <p>Move fixture if it is being operated very close to an unshielded high-voltage installation.</p> |

# Specifications

## Physical

Weight ..... 14 kg (30.9 lbs.)  
Dimensions (W x H x D)..... 319 x 256 x 481 mm (12.6 x 10.1 x 18.9 in.)



## Lamp

Approved lamp ..... Philips MSD Platinum 2R  
Color temperature ..... 9000 K  
CRI (Color rendering index) ..... 75  
Average lifetime ..... 2000 hours

## Dynamic Effects

Color wheel..... 14 colors plus open, continuous and stepped scrolling,  
.....rotation with variable direction and speed  
Static gobo wheel . 17 gobos plus open, continuous and stepped scrolling,  
.....rotation with variable direction and speed  
Shutter ..... Strobe effects, pulse effects, instant open and blackout  
Prism ..... 6-facet, indexing and rotation with variable direction and speed  
Focus.....Motorized  
Dimmer ..... 0 - 100% continuous dimming  
Pan ..... 540°  
Tilt..... 270°

## Optics

Beam angle ..... 3°

## Control and Programming

Control system..... DMX  
DMX channels ..... 13  
Setting and addressing.....Control panel with backlit LCD display

|                                  |  |
|----------------------------------|--|
| DMX compliance .....             | USITT DMX512/1990                            |
| 16-bit control.....              | Dimming, pan, tilt                           |
| Pan and tilt speed.....          | Adjustable via onboard control panel and DMX |
| Position correction system ..... | Pan and tilt                                 |

**Construction**

|                 |   |
|-----------------|---|
| Color .....     | Black                                     |
| Housing .....   | High-impact flame-retardant thermoplastic |
| IP rating ..... | IP 20                                     |

**Installation**

|  |   |
|--|---|
| Minimum distance from illuminated surfaces ..... | 8 m (26.2 ft.)  |
| Location .....                                   | Indoor use only, must be fastened to surface or structure |
| Mounting points .....                            | Four quarter-turn bracket mounting points                 |
| Orientation .....                                | Any   |

**Connections**

|                       |                           |
|-----------------------|---------------------------|
| AC power in/out ..... | Neutrik PowerCon          |
| DMX data in/out.....  | 3-pin & 5-pin locking XLR |

**Electrical**

|                         |                                     |
|-------------------------|-------------------------------------|
| AC power .....          | 100-120/200-240 V nominal, 50/60 Hz |
| Fuse.....               | T6.3A                               |
| Power supply unit ..... | Auto-ranging electronic switch-mode |

**Typical power and current**

|                   |                        |
|-------------------|------------------------|
| 110 V, 60 Hz..... | 2.2 A, 234 W, PF 0.996 |
| 230 V, 50 Hz..... | 1.1 A, 231 W, PF 0.996 |

*Measurements made at nominal voltage. Figures are typical, not maximum. Allow for a deviation of +/- 10%.*

**Thermal**

|   |                |
|---|----------------|
| Cooling .....   | Forced air     |
| Maximum ambient temperature (T <sub>a</sub> max.) ..... | 40° C (104° F) |
| Minimum ambient temperature (T <sub>a</sub> min) .....  | 0°C (32° F)    |

**Included Items**

Power cable, 1.5 m, without mains plug

*Specifications are subject to change without notice. For latest product specifications, see [www.martin.com](http://www.martin.com)*



### **Disposing of this product**

RUSH by Martin™ products are supplied in compliance with Directive 2012/19/EC of the European Parliament and of the Council of the European Union on WEEE (Waste Electrical and Electronic Equipment), where applicable. Help preserve the environment! Ensure that this product is recycled at the end of its life. Your supplier can give details of local arrangements for the disposal of RUSH by Martin™ products











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